

Biodiversity

Roles and Functions of Regional Councils

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Preface

Conservation in New Zealand has a long and rich heritage. However, the notion of managing for *biodiversity* really only goes back a couple of decades. When the Resource Management Act (RMA) was conceived in the late 1980s biodiversity as a concept was in its infancy. While it gained a toehold in the Act in 1991 it wasn't until New Zealand signed the international Convention on Biological Diversity at Rio in 1992 that the term started to gain traction in New Zealand resource management and conservation policy-making.

The 2000 New Zealand Biodiversity Strategy painted the size of the biodiversity challenge and organised a series of policy interventions and actions for government departments and for local government around the biodiversity theme.

The 2000 Bio-what? process considered what could be done to improve the management of biodiversity on private land and gave the first serious consideration to a national policy statement on biodiversity under the RMA. While that did not eventuate, one of the key initiatives that did proceed was an amendment to the RMA in 2003 establishing biodiversity as an express function of both regional and territorial authorities.

Since then there have been other faltering efforts and national policy statements, national guidance on priorities and second-generation regional policy statements and regional and district plans. Practice has evolved but a coherent understanding of what managing for biodiversity means at the regional level remains elusive.

Ten years on from the introduction of biodiversity as a function in the Act it is timely then for regional councils to stand back and take a strategic look at what we have come to understand by the term biodiversity, how we currently understand our roles and mandate relative to others and what policy challenges still lie ahead. That is the purpose of this document.

Executive Summary

This report:

- **Focuses on biodiversity as it relates to the management of *private land* (and associated freshwater and aquatic environments). By convention, regional councils do not exercise regulatory or operational functions in respect of public conservation land, with the Department of Conservation maintaining responsibility for those lands and the biodiversity values they contain.**
- **Recognises that every region faces *different challenges* in managing for biodiversity and that this will result in *variation* in the nature and extent of responses by regional councils.**

This report was commissioned by regional councils to inform the work of the Biomanagers Group. It forms stage 1 of a two-stage project that aims to consider the question of how regional councils can best contribute to biodiversity outcomes.

What Biodiversity is

Biodiversity means the *variety of life* – both plants and animals. Maintaining biodiversity means ensuring the diversity of species and ecosystems of which they form a part, is retained in perpetuity. It requires an emphasis on both habitat and species.

In the Resource Management Act the focus is on maintaining *indigenous* biodiversity because there is often conflict between introduced species and the long-term survival of indigenous species. Maintaining indigenous biodiversity inevitably involves managing introduced species (although there are times when introduced species have an important role in maintaining indigenous biodiversity).

Sometimes biodiversity management is reduced to a discussion about the importance of particular areas or habitats (“sites”) but it can never be simply about managing defined areas of vegetation in isolation from the biophysical context within which they occur. Biodiversity occurs across the landscape and the connections and flows between areas and habitats and through aquatic and marine systems that also require management if biodiversity is to be maintained.

Biodiversity in the RMA

It is often over-looked, but biodiversity protection has been an *outcome* sought by the RMA since its enactment in 1991. Since 2003, however, the establishment of objectives, policies and methods to *maintain indigenous biodiversity* has been a mandatory *function* of regional and district councils under the RMA.

That 2003 amendment signalled a significant change for regional councils. Certainly they must undertake their traditional functions (water, soil and coastal resource management) to safeguard ecosystem functioning but the amendment meant that something additional was required. In short, the 2003 amendment inserted a new and additional function for regional and district councils.

The embedded objective within the biodiversity function (maintenance) is hugely ambitious (arguably unfairly so). To achieve that mandatory function under the RMA regional councils may need to:

1. Do what regions have always done (undertake functions in a way that manages impacts on ecosystem functioning) and do it well;

2. Use the *powers* available to them under others Acts (notably the Local Government Act and the Biosecurity Act) to engage in *proactive* management intervention (since it is generally accepted that a declining biodiversity will not be arrested by reactive measures alone¹); and
3. Collaborate and coordinate with other parties with a role in biodiversity management to share resources and leverage and prioritise investment and action.

Hence, that additional “something” required by the 2003 amendment is:

- a) The need to aim at a specific *outcome* – “maintenance” (that is, no further loss of species, or genetic² variation within species or ecosystem diversity) in contrast to simply managing adverse effects on biodiversity.
- b) Where regional council intervention is required to deliver that outcome (i.e. where biodiversity is declining in a region), commit to *proactive* biodiversity management (rather than a more traditional reliance on managing adverse effects on ecosystems through rules and consent conditions)
- c) A need to understand the *concept* of biodiversity and the need to measure and assess performance in more sophisticated ways.

While not explicit in the RMA, the focus of regional councils’ biodiversity function is on *private* land and in coastal areas and freshwater environments (managing habitat quality). However, the division of responsibility is not clear cut with other agencies managing particular risks in those environments hence the scope of responsibility is defined by a combination of spatial delineation/type of environment, land tenure and by the particular risk or threat to be managed. Central agencies are focused on species management (including conservation of genetic resources). This complex arrangement is depicted in Figure 1.

Importantly, the size of the challenge will vary considerably between regions due to a range of factors including (amongst other things) the pattern of historic land use and land clearance, the presence and density of pests and the extent and representativeness of public conservation estate.

Regional councils biodiversity-relevant powers

Regional councils have the mandatory regional function described above. They also have powers that, although discretionary, will often be critical to delivering the biodiversity function under the RMA. These include, in particular, the power to rate and invest in biodiversity under the Local Government (Rating) Act and Local Government Act, and the power to set rules and invest operational programmes under the Biosecurity Act (in conjunction with the RMA and the Local Government Act).

Regional councils’ current activity and investment

The survey of regional councils undertaken as part of this project indicates that, to some extent, regional councils are delivering on these additional functions.

More specifically the survey found that:

¹ This also sets the function apart from most other section 30 functions.

² Noting that conservation of genetic resources (through, for example, maintaining collections and germplasm banks) is assigned to central government (rather than local government) under the Biodiversity Strategy 2000.

- The total regional council investment attributable to biodiversity management is at least \$67 million per year. This includes approximately \$22 million on pest management that benefits biodiversity and grants and incentives worth over \$8 million. By comparison the Department of Conservation invests approximately \$155 million.
- Almost 200 regional council staff have biodiversity as their primary role. Almost 300 have biodiversity within their job descriptions.
- This level of investment makes the regional sector a major player in biodiversity management and almost certainly the second biggest investor in New Zealand.
- Within the regional sector there is significant variation in the nature and level of investment made.

Challenges and paradoxes in biodiversity management

Although the survey demonstrates that the regional sector is significant player in biodiversity management, challenges and questions remain.

- a) Despite the New Zealand Biodiversity Strategy 2000 (NZBS) specifying roles for regions in respect of some 82 actions, there remains a lack of clarity of the role of regional councils relative to other players³. Many other players have “bit roles” but, off the public conservation estate, regional councils are the only player with the overview function of maintaining indigenous biodiversity and the accompanying powers required to deliver.
- b) The Department of Conservation has a leadership role in conservation (and hence biodiversity) but off the conservation estate (and recently even on the conservation estate) relies on others in “partnership”⁴ roles for delivering on conservation and biodiversity goals. Despite often being considered the lead agency in biodiversity, in fact leadership is dispersed across many agencies – a fact demonstrated by the (now dated) Biodiversity Strategy⁵.
- c) There is significant variation (as noted above) between councils.
- d) Dispersed effort on biodiversity across council organisations, making it difficult to assess the size of the investment being made.
- e) Difficulty in “job sizing” and performance monitoring (relative to the function) beyond assessing the effectiveness of specific projects, making the transparency of performance against the function poor.

As noted above, the paradox is of biodiversity management under the RMA is that while there is a clear mandatory function, the fulfilment of that function is dependent, in large part, on the exercise of powers, which are, and must properly remain, at the discretion of councils.

³ The NZBS does establish central government as having responsibility for “providing the direction and leadership to ensure the conservation and sustainable use of biodiversity”. However, multiple parties are listed as having responsibilities for most of the 147 actions specified. Most clarity is provided where regional councils are not identified as having a role. This occurs in respect of, in particular, conservation and use of genetic resources. The same strategy identified regional councils as having a joint lead agency role in regional biodiversity restoration strategies and in regional strategies and plans to manage plant and animal pests threatening biodiversity.

⁴ Partnerships take many forms including work with regional councils but also, increasingly with business and the community (DOC reports over 500 such partnerships).

⁵ DOC corporate and strategic Documents generally identify 6-8 main functions but do not specify national leadership on biodiversity management. Off the conservation estate the role is generally described as “advocacy”.

This paradox calls for clarity about what *must* be done by regional councils and what *could*, be done in order to deliver that function effectively. In addition, this paper has identified a range of issues about how regional councils' might most efficiently and effectively contribute to the maintenance of biodiversity. However, it is also apparent that there are broader strategic issues including whether we have:

- the concept of biodiversity and its related parts, as well as the roles and responsibilities of regional councils and others, properly articulated in statute and national policy; and
- the governance structures and arrangements to best deliver a complex service that requires a high degree of strategic alignment and collaboration.

Addressing these issues cannot be achieved by regional councils acting alone. Central government agencies and district councils have a particular mandate and interest in questions of the law and policy frameworks and should be involved in any further initiative by regions to address such issues.

Recommendations

- 1. Note that this report contains guidelines (page 33) on what *must* be done, what *should* be done and what *may* be done to fulfil the biodiversity functions. Implementation of these guidelines will be dependent on the circumstances that apply in each region.**
- 2. Recognising that the guidelines referred to in recommendation 1 only go part way to resolving issues identified by this report, undertake Stage 2 of this project by producing a think piece that examines the:**
 - a. strategic issues in biodiversity management and possible solutions, notably legislative and or policy change to:**
 - i. resolve legislative confusion; and**
 - ii. more clearly define respective roles and responsibilities.**
 - b. operational questions outlined in Section 11.2 of this report (focussed on how regions might best deliver their biodiversity responsibilities with current arrangements) and associated responses.**

Table 1 - Regional councils place in biodiversity management

	Habitat Quality			Species protection/population management & recovery
	Legal protection of sites	Management of adverse effects of resource use	Operational investment in habitat protection and restoration	
Private (including Maori) land	DOC [Nga Whenua Rahui, Nature Heritage Fund QEII - covenants Territorial authorities [consent conditions/notices, reserves acquisition] Regional councils [parks acquisition]	Territorial authorities/unitary authorities Regional councils* (when accepted)	Regional councils [soil conservation & rivers control] DOC [Biodiversity advice and condition improvement funding] Regional councils [Direct and third party funding of projects] Regional councils/DOC/ MPI [pest management]	DOC – Wildlife protection MPI [Indigenous forest harvesting]
Freshwater environments	-	Regional councils*		DOC [Wild animal control] MPI [Biosecurity – incursion response]
Marine environments <12NM	DOC [Marine reserves]	Regional councils*		DOC – [Freshwater fish and whitebait management] MPI [Fisheries management] MPI [Biosecurity – incursion response]
Marine environments 12NM – 200NM	DOC [Marine reserves]	Minister for the Environment/EPA	-	MPI [Fisheries management]
Other public conservation estate	DOC [Ownership]	Regional councils*	DOC	DOC – Access and concessions system
				DOC [species recovery, mainland islands, pest control] Regional councils [pest management]

*Mandatory regional council biodiversity functions in *italics*

1 Introduction

The Regional BioManagers Group has identified “the scope of biodiversity and regional council roles and functions now and in the future” as a priority area for its work programme. This was agreed by regional chief executives.

This paper contributes to that work by providing the informational basis on which a collective regional council /unitary authority view about biodiversity and respective roles of agencies may be discussed and agreed.

More specifically it:

- Provides a definition and explanation of biodiversity;
- Discusses how biodiversity is provided for within the RMA and other relevant statutes, including the roles of regional councils and territorial authorities;
- Defines the roles of other parties in biodiversity management;
- Reviews existing investment in biodiversity by regional councils and unitary authorities;
- Offers a suggested set of obligatory roles for regional councils/unitary authorities to fulfil their legislative functions in respect of biodiversity: and
- Identifies some key questions and issues requiring further consideration and resolution. (Note answering those issues will be addressed by a second stage to this project).

In this paper the term “regional councils” includes unitary authorities unless otherwise stated.

2 Context

The current “system” for managing biodiversity has evolved over a many decades and includes both central and local government agencies as well as a raft of private sector and community players. These operate under various forms of legislative and/or community/stakeholder mandates. As a public good of national interest, central government maintains over-arching responsibility for the national effort to protect biodiversity both on and off the public conservation estate and in the public and private domain.

The New Zealand Biodiversity Strategy (overseen by the Department of Conservation) currently provides the best road map of the strategic direction of management and the broad and specific responsibilities of central agencies and local government (and others). This has led to a range of policy interventions to enhance various aspects of biodiversity management.

Numerous statutes have a role in biodiversity management addressing different threats and/or providing different intervention tools. These originate from different eras and represent different philosophies and priorities. A large number of agencies and groups operate under this framework on a voluntary, community, commercial or philanthropic basis. (Discussed further in Section 8).

This picture has resulted in some of those involved in biodiversity management observing a range of issues and inconsistencies (as discussed in this report) and accordingly, developing a view that our management of biodiversity might be capable of (and indeed in need of) enhancement.

Although, as an interested party, regional councils might well agree (through this paper) that a range of issues are present, they are also keenly aware that they are but one player in biodiversity management and certainly not the most important in terms of leading the national response.

In that regard, making the biodiversity system better, more effective and more efficient, will require national level leadership. This paper therefore needs to be read in that context.

2.1 Purpose of this Paper

This paper represents Stage 1 of a two Stage project. The project is being undertaken because of a desire amongst the regional sector to develop a collective view on the scope of regional councils' roles and functions in biodiversity management.

That desire is driven from an understanding that current interpretation of the regional biodiversity function (and hence commitment to biodiversity) across the regional sector is highly variable.

Variability about *how* a function is delivered is often appropriate reflecting as it may different local circumstances. But variability regarding the acceptance of the function and its relevance to the core business of regional councils can be problematic if it means regions do not act collectively. For a variety of political and practical reasons regions need to act, and be seen to act, collectively even if they do not all do the same things to the same level.

The lack of clarity that exists around regional councils' roles stems, in part, from the fact that multiple other agencies have mandated roles in the same space. Where multiple agencies are involved there is always the potential for duplication, overlaps and gaps in effort (as agencies can assume others are taking up any slack). There is, therefore, a need for the boundaries between responsibilities to be clear and well understood. This is particularly true in the context of biodiversity management where central government has a clear leadership role but delivery relies on the exercise of a wide range of central and local government and community organisations. Within that mix it is critical to operate with a clear understanding of where the regional role begins and ends.

Although there is a desire to develop a collective agreement about regional councils' roles in biodiversity, it is important to do this while acknowledging that regional councils have different levels of capacity, resources and community support.

Recognising the complex statutory and political environment within which regional councils currently undertake biodiversity related roles, the regional sector, through the BioManagers Group, has commissioned this report. It seeks to take a strategic look at:

- a. What regions have come to understand by the term biodiversity;
- b. How regions currently understand our roles and mandate relative to others;
and
- c. What policy challenges still lie ahead.

Stage 2, to be completed at a later date, will consider broader questions about how biodiversity outcomes might best benefit from regional council/unitary authority involvement.

3 Biodiversity defined

In resource management circles, biodiversity has become a commonly used and, not infrequently, misused term.

The term biodiversity is, of course, merely a compound of the words *biological* and *diversity* and is synonymous with the phrase biological diversity (the term used in legislation).

There are many different definitions of the term biodiversity but all stem from the key concepts incorporated in the definition used in the international Convention for Biological Diversity (CBD).

That definition reads:

"Biological diversity" means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

That definition is used in the NZ Biodiversity Strategy 2000 (NZBS)ⁱ and informed that used in the RMA (see RMA definition – section 4.2). The core of the definition (and most others) is the reference to three dimensions of diversity:

- **Genetic diversity.** This is the genetic variation between individuals of a single species or within a population of a single species. (Genetic diversity is important for the long-term survival of a species because it increases the adaptability and, therefore resilience of a species to external changes).
- **Species diversity.** This is the variety of species within a specific geographic area (sometimes referred to a "species richness").
- **Ecosystem diversity.** This is the variety of ecosystem types or different assemblages (combinations) of species. Ecosystem diversity is closely related to variation in the "non-living" (physical) components of the environment such as soil, nutrients, light, temperature, water which interact with biota to form distinct ecosystems.

Although described as separate dimensions, the three types of diversity outlined above are, in fact, inter-dependent. That is, all must be present for any one to be maintained long term. For example, species biodiversity is reliant on genetic diversity and genetic diversity is reliant on ecosystem diversity.

The notion of diversity or variation is at the heart of the term biodiversity. A very simple definition of biodiversity is *"the variety of living things"*. Protecting or maintaining biodiversity means protecting or maintaining the *diversity* of life forms (not necessarily a specific life-form in a particular place if that would not be necessarily to protect diversity). This raises one of the essential issues in biodiversity management: when is a place (habitat) or a population (group comprising a single species) important to maintaining biodiversity? Answering that question necessitates a high degree of ecological understanding and assessment.

For the above reasons, biodiversity is not just a term: it embodies a series of inter-related ecological concepts. Those concepts need to be understood to fully appreciate the meaning of biodiversity. Defining the term is one thing but conveying an understanding of it is quite another. The discussion that follows from section 3.1 attempts to do that.

3.1 Biodiversity, indigenous biodiversity and natural range

A paradox of the concept of biodiversity is that diversity of species is not necessarily conducive to the long-term survival of particular species or ecosystems if that diversity arises from, in part, the presence of non indigenous plants and animals that are invasive or predatory (i.e. pests).

That is certainly true in New Zealand more than almost anywhere due to our flora and fauna having evolved in isolation and often being unable to compete with introduced species.

Hence, global biodiversity necessitates a focus on indigenous species and the maintenance of species to their natural ranges. As noted later, statutory functions therefore expressly use the term *indigenous biodiversity*.

At the genetic level, the notion of a species' "natural range" is taken further. Ecologists would argue that maintaining genetic diversity means genetic variation in a particular species is maintained (by retaining the natural segregation of different genetic stock). Hence the preference for eco-sourcing of plants (i.e. growing from local seed sources rather than "importing" seed of the same species from elsewhere).

However, further complexity arises because introduced plants and animals can make a positive contribution to indigenous biodiversity by providing habitat, food sources or filling an important ecological niche left vacant by the demise of an indigenous species. Thus a second paradox is that protecting indigenous biodiversity can, in some cases, involve protecting non indigenous species (or habitats comprising introduced species – plants or animals).

Box 1 - Use and misuse of the term

The term biodiversity is a noun. An area that is “biodiverse” (adjective) has high biodiversity (noun). But it is not synonymous with “all living things”, “any living things” or “a living thing”, despite frequently being used in that context.

A remnant forest might, for example, be an “area of biodiversity” but the plants and animals in the area are not themselves “biodiversity” despite often been referred to as such. Misuse of the term in this way can lead to some confusion.

Furthermore, not all areas of indigenous vegetation will have high biodiversity although all will have some level of biodiversity. Similarly, some areas or some populations will be much more important for maintaining biodiversity than others because what they contain or represent may be rare or threatened or otherwise critical to maintaining a viable population or example of the particular species or assemblage that, if lost, would reduce overall diversity. In that sense, biodiversity is not a “thing” that either exists or not. It describes a state that can be present to a greater or lesser extent in any given context.

3.2 Biodiversity and the importance of scale

As noted earlier, biodiversity is not synonymous with “any living thing” but has a more subtle meaning focused on *diversity of living things*. In managing for biodiversity it is therefore necessary to consider the *importance* of an area or habitat for retaining that diversity long-term (considering the genetic, species and ecosystem dimensions). That is, there is a need to consider⁶:

- what species and genetic variation exist there (or rely on that area for some or all of that species’ life cycle) and the importance of those populations for maintaining viable populations of species over the short and long term.
- to what extent the particular ecosystem type is distinct from other places or is otherwise important to maintaining an ecologically viable representation of that ecosystem type.

Thus, as noted earlier, maintaining biodiversity does not necessarily mean maintaining every individual specimen of plant or animal, it means understanding the importance of a specimen, population, area or habitat to maintaining any one of the three dimensions of diversity described above and, when the specimen, population, area or habitat is found to be important for maintaining biodiversity, providing protection.

A complicating factor is that of *scale*. Because of the natural variability of biological assets across the landscape, what is commonplace in one area can be nationally very rare. Conversely, what is rare in one area can be commonplace in another. Thus the scale at which biodiversity is assessed can be critical to the question of the importance of a particular population or area. That has caused some classification systems to apply a “nationally”, “regionally” and “locally” significant lens. It also underpins the need for scalable geospatial tools like Land Environments New Zealand (LENZ) for informed biodiversity assessment and management.

3.3 Defining an area’s “importance” to biodiversity

Various attempts have been made to develop a National Policy Statement (NPS) on Biodiversity (the first in 1999/00 and the most recent in 2010/11). Those draft

⁶ Note that many assessments relating to “significance” of areas and habitats apply a list of criteria broader than the core biodiversity considerations listed here.

policies sought (predominantly) to provide a rational and robust basis to assess and identify areas that will be critical to maintaining biodiversity - at least at a national scale⁷.

The draft policies provide an illustration of what the abstract concept of biodiversity can mean in more practical resource management terms.

Those various drafts all sought to recognise and provide for the various dimensions of biodiversity (as defined above) by identifying for protection:

- a. Species that need a high level of protection because they are *nationally rare or endangered* (to be achieved by offering protection to areas and habitats where the scheduled species may still be found).
- b. Vegetation of a type that is *reduced to less than 20%* of its original cover (using the LENZ tool to model the range of likely – based on physical characteristics – types of vegetation/habitat), plus all dunes and wetlands.
- c. Vegetation that was *naturally uncommon* (and therefore vulnerable to be lost by even small scale clearance).

3.3.1 Information and analytical tools

The approach proposed by the draft NPS also highlights how taking an analytical approach to determining biodiversity values and priorities relies on information (particularly information on land cover), species classification systems and information management tools such as LENZ (which provides a predictive model of vegetation/habitat types according to underlying physical characteristics across the country). Using these tools it is possible to take technical or science-based approach to the assessment of biodiversity values that looks at local values within a broader context.

It is important to record that some people argue that because New Zealand's indigenous flora and fauna (and certain habitat) is so depleted relative to its pre European state, that in many regions there will be few areas or populations that could be lost without reducing, or further threatening, indigenous biodiversity. That is, the niceties of whether and why an area, habitat or population maybe important for maintaining biodiversity are academic since all remaining indigenous species are important at some level (i.e. nothing is unimportant albeit some may be more important than others). The tension between that view and the approach proposed in draft national policy is one reason an NPS has not been promulgated (and one reason the concept of biodiversity as an organising theme for prioritisation of conservation outcomes in resource management remains fraught).

3.4 Sites versus landscape

Another critical issue to note is the tendency for debates about biodiversity to be reduced to debates about *sites* (i.e. particular habitats or areas of indigenous vegetation). Even in this paper reference to “areas” or “sites” is used as a shorthand means of discussing and characterising biodiversity issues. While areas and sites are key dimensions in biodiversity management, ecosystems supporting biodiversity cross the *landscape*. Sites seldom operate in isolation of their surrounding

⁷ This approach to defining national priorities for the maintenance of biodiversity was consistent with the non-statutory “Statement of National Priorities”ⁱⁱⁱ issued in 2007 by the Ministers of Conservation and Environment.

environment (biota moves in and out of such areas, water nutrients and energy flow through etc).

In that sense, managing biodiversity can never be simply about managing defined areas of vegetation in isolation from the biophysical context within which they occur. Biodiversity occurs across the landscape and the connections and flows between areas and habitats and through aquatic and marine systems also require management if biodiversity is to be maintained. This concern for wider landscape processes is often referred to as *ecological functioning* or *ecosystem services*.

3.5 Biodiversity maintenance versus nature conservation

A common question is whether biodiversity management is synonymous with *conservation* (or what was once referred to “nature conservation”). Technically it is not for the reasons given above. That is, the maintenance of biodiversity may be one objective (or philosophy) of conservation but conservation may well be broader in scope. Biodiversity maintenance has developed as a theme to refine a key purpose of conservation and help define conservation priorities.

Key points

- *Biodiversity means the variety of life – plants and animals. Maintaining biodiversity means ensuring the diversity of species and ecosystems of which they form a part, is retained in perpetuity.*
- *The focus is on maintaining indigenous biodiversity because there is often conflict between introduced species and the long-term survival of indigenous species. Maintaining indigenous biodiversity means managing introduced species. While maintaining indigenous biodiversity usually involves control of introduced species (i.e. pest control), there are times when introduced species have an important role in maintaining indigenous biodiversity.*
- *Managing biodiversity can never be simply about managing defined areas of vegetation in isolation from the biophysical context within which they occur. Biodiversity occurs across the landscape and the connections and flows between areas and habitats and through aquatic and marine systems also require management if biodiversity is to be maintained.*
- *The concept of biodiversity is multi-dimensional and a comprehensive understanding requires an awareness of ecological concepts and principles.*

4 History of biological diversity in the RMA

It is often overlooked that the term *biological diversity* has been used in the RMA since its enactment in 1991. Section 7 of the Act refers to the “intrinsic values of ecosystems”. The definition of “intrinsic values” in relation to ecosystems, is defined to mean:

Those aspects of ecosystems and their constituent parts which have value in their own right including-

- (a) *Their biological and genetic diversity [emphasis added]; and*
- (b) *The essential characteristics that determine an ecosystem’s integrity, form, functioning, and resilience.*

4.1 New Zealand Coastal Policy Statement 1994

The New Zealand Coastal Policy Statement 1994 (NZCPS) was the first statutory instrument to use the word “biodiversity”. Policy 1.1.4 stated that:

It is a national priority for the preservation of natural character of the coastal environment to protect the integrity, functioning, and resilience of the coastal environment in terms of:

- (a) *the dynamic processes and features arising from the natural movement of sediments, water and air;*
- (b) *natural movement of biota;*
- (c) *natural substrate compositions;*
- (d) *natural water and air quality; and*
- (e) *natural bio diversity, productivity and biotic patterns [emphasis added]*

The reference to biodiversity in the NZCPS has been continued and extended in the 2010 version (see section 5.6).

4.2 Biodiversity as a function under the RMA

Notwithstanding the use of the term in Part 2 and in the NZCPS, the term “biological diversity” was not defined in the RMA until an amendment in 2003.

That definition, now included in Section 2 of the RMA, states:

Biological diversity means the variability among living organisms, and ecological complexes of which they are a part, including diversity within species, between species and of ecosystems.

Up until the 2003 amendment⁸ there was no specific function relating to biodiversity. Instead the scheme of the Act provided for Part 2⁹ to be given effect to through the exercise of the general and specific functions in section 30 and 31 of the Act. In other words, it was an *outcome* to be achieved (or contributed to) rather than a function in its own right.

In exercising the functions (including making decisions on resource consent applications) local authorities needed (in theory) to have regard to Part 2 and hence biological diversity.

⁸ Resource Management Amendment Act 2003 (2003 No23)

⁹ Noting Part 2’s reference to significant areas of indigenous vegetation and significant habitats as well as biological and genetic diversity (being part of the intrinsic value of ecosystems).

However, that imperative was not strong given that:

- the extent to which a local authority could act to protect biodiversity was limited by its functions;
- the requirement merely to “have particular regard” to intrinsic values (which included biodiversity) required no particular outcome; and
- The provisions of plans often prevented consideration of biodiversity (because controlled and restricted discretionary consent applications did not provide for biodiversity as a matter able to be considered).

Further, given that most biodiversity protection was reliant on control of land use and almost all land use control was exercised by territorial authorities, most regional councils considered their role in biodiversity under the RMA as being limited.

In the first decade of the RMA, most regional councils included criteria for identifying “significant natural areas” (a related Part 2 matter) in their RPSs. Some also accepted a role in identifying and protecting ecosystem health in aquatic environments and in wetlands from, in particular, reduction in water levels and increases in contaminants (clear regional functions) but otherwise biodiversity policy and regulation was left to territorial authorities¹⁰.

An independent (but MfE-sponsored) review of biodiversity management on private land in 2000¹¹ concluded that regional councils should have a greater and more specific role in biodiversity, particularly because:

- Many territorial authorities were struggling with the issue and regional councils’ greater scale and technical expertise allowed them to potentially provide a much needed leadership role.
- Regional councils had powers under the RMA to effectively terminate existing land use rights that are not available to territorial authorities¹¹.
- There was a clear relationship between biodiversity management and regional councils’ pest management powers under the Biosecurity Act.

Key points

- *Although often over-looked, the concept of biodiversity has been part of the RMA since enactment in 1991 and has been an explicit consideration in coastal policy.*
- *Although always part of the RMA, biodiversity was initially located as an outcome to be achieved by the core functions of land, water and air and coastal management rather than a function in its own right.*

¹⁰ Although some did fund various conservation-related initiatives.

¹¹ These land use control powers were considered essential if existing lawful activities such as grazing areas of indigenous vegetation were to be effectively addressed.

5 Regional councils' roles and functions in biodiversity under the RMA

As already noted, the RMA was amended in 2003. Section 30 (functions of regional councils) was amended to provide the additional specific function 30 (1) (ga) being:

“The establishment, implementation, and review of objectives, policies and methods for maintaining indigenous biological diversity”.

Section 31 (functions of territorial authorities) was also amended by adding an additional purpose for which the effects of land use could be controlled being:

“the maintenance of indigenous biological diversity”.

Noting the potential for overlap in these functions (in respect of land use control), the 2003 amendment also added to section 62 the requirement for RPSs to specify which local authority was responsible for controlling the use of land to maintain indigenous biodiversity (section 62 (1) (i) (iii)).

5.1 What does maintaining indigenous biological diversity entail?

The 2003 biodiversity function is unique in the RMA in that the function refers broadly to the establishment and implementation of ... methods (not just narrow regulatory control) and includes an objective (maintenance) within the function itself. That is, not only do local authorities have to manage natural resources so as to avoid, remedy or mitigate effects on the biodiversity of its region, they must (in theory) establish and implement methods to *maintain* biodiversity.

That is an ambitious ask for two related reasons:

- First, maintaining biodiversity in the face of the threats faced will likely require more than managing the negative externalities of resource use and will require active intervention by councils, other agencies or both.
- Second, whether biodiversity is maintained will depend on a range of parties and actions outside of a local authority's control (including for example, how well the Department of Conservation manages its estate and species recovery programmes).

5.2 Other biodiversity-related provisions of the RMA and the sympathetic implementation of other regional functions

Although the “maintenance of biodiversity” is a function in its own right under section 30(1) (ga), giving effect to that function necessarily requires the exercise of other section 30 and 31 functions. In other words, the biodiversity function is not a separate, stand-alone function but is dependent on the sympathetic exercise of other core regional council responsibilities. These include, for example, the control of land use, discharges, water takes/damming and diversion, and use of coastal space.

Various other provisions of the Act require the exercise of all regional councils' functions to be mindful of matters of direct relevance to maintaining indigenous biodiversity as they exercise those functions. These include:

- The reference in Section 5 (2) (b) to *“the life supporting capacity or air, water, soil, and ecosystems”*
- Section 6(c)'s identification of *“the protection of areas of significant indigenous vegetation and the significant habitats of indigenous fauna”* as a matter of national importance.

- Section 7 (d)'s requirement for all those exercising functions to have particular regard to "*the intrinsic values of ecosystems*" (defined to include biological and genetic diversity as discussed above)
- The definition of "environment" which includes "*ecosystems and their constituent parts*".

In practice the exercise of *policy and regulatory* powers to give effect to both the section 30(1) (ga) function and the sympathetic implementation of other functions will include the following matters.

Aquatic (freshwater) habitat protection

- Maintaining water quality within a tolerable range for indigenous species (e.g. nitrate, DO, temperature, clarity, pH etc) by controlling discharges.
- Maintaining water quantity (flows and levels) to provide suitable habitat and ecological cueing by controlling takes, damming and diversion of water
- Maintaining accessibility/connectivity to provide for life cycles/stages including migration of diadromous species and maintaining genetic variability (e.g. fish passage) by controlling (for example, damming and stream crossings).
- Limiting disturbance to beds and banks to minimise physical damage (especially food sources and spawning areas) by controlling, for example gravel extraction and/or deposition and stock access.
- Managing land use to minimise sedimentation and consequential habitat change including controlling earthworks and soil disturbance.
- Riparian vegetation control for maintenance of habitat quality (e.g. shading for temperature control), food sources and spawning sites, including, for example, controlling forest harvesting in riparian margins and grazing/stock access.

Terrestrial habitat protection¹²

As noted above land use control for the maintenance of biodiversity is shared with territorial authorities. This includes maintaining habitat and populations by:

- Controlling/limiting indigenous vegetation clearance;
- Controlling/limiting land management (e.g. fires, grazing, afforestation); and
- Controlling/limiting introduction of uses and activities that may pose a particular threat to populations or the ecological integrity of remnant areas of indigenous vegetation (such as residential development in areas with species vulnerable to predation by domestic pets, wind turbines, roading etc).

Coastal habitat protection

- Maintaining the quality of coastal water by controlling discharges;
- Controlling land use, where necessary, in catchments to minimise sedimentation of low energy (e.g. estuarine) environments;
- Controlling discharges both directly to the marine environment in catchments discharging to the marine environment to limit the accumulation of eco-toxic contaminants in marine sediments and/or smothering benthic habitats; and
- Limiting loss of near shore habitat by controlling reclamation.

These functions and activities of regional councils will be undertaken by:

¹² These roles are shared with territorial authorities.

- including appropriate provisions in regional policy statements and plans; and
- making appropriate decisions on resource consents including placing conditions on consents requiring mitigation and off-setting of loss of indigenous vegetation and habitat. These conditions may relate to ecosystem functioning according to the functions of section 30 (1) (a)-(g) rather than the section 30 (1) (ga) (“maintain biodiversity”) function.

5.3 Pro-active roles

Because the sympathetic exercise of the section 30 regulatory functions may alone be insufficient to deliver the *maintenance* of biodiversity (only an avoidance of, or reduction in, adverse impacts) other, additional, actions may be necessary to fully deliver the section 30(1) (ga) “maintenance” function. These will likely centre on tools and mandates provided under other legislation (discussed in sections 6 and 7).

5.4 Practice roles in implementing RMA biodiversity functions

The detailed practices required of regional councils to implement the biodiversity function typically include:

- Developing criteria/methodologies for the identification of areas and habitats that require protection;
- Applying criteria/methodologies to identify areas and habitats requiring protection (this may include desktop studies, GIS analysis and/or field survey);
- Negotiating and allocating responsibility for land use control (in the context of the RPS);
- Identifying/developing/implementing methods for the protection of areas and habitats protection;
- Ensuring necessary and appropriate provisions are included within statutory plans;
- Implementation/enforcement of any rules;
- Monitoring and research to enhance understanding of biodiversity values, the state of biodiversity and verify the efficacy of plan methods; and
- State of the Environment (SoE) reporting on the state of biodiversity.

The last two of these tasks are required by Section 35 of the RMA. As noted above, the maintenance of biodiversity is a specific function of regional councils. Hence the duty imposed by section 35 to monitor *“the state of the environment to the extent that is appropriate to enable a local authority to effectively carry out its functions...”* suggests the need to monitor biodiversity. Further, section 35 requires regional councils to monitor “the effectiveness and efficiency of policies, rules or other methods” and take appropriate action where this is shown to be necessary. Section 35 (2A) requires councils to report on monitoring results at least every five years.

These statutory duties may suggest the need for a biodiversity monitoring programme at a level commensurate with other regional council functions relating to, for example water, soil and air management. It is though, a potentially onerous requirement given the complexity and technical challenges associated with accurately and meaningfully monitoring and reporting the state of biodiversity. Presumably the duty relates to those aspects of biodiversity managed by regional

councils rather than, for example, the state of public conservation land and species populations on those lands. However, that is by no means clear in the legislation.

Despite the challenges, regional councils have collectively developed a draft set of biodiversity indicators to measure whether the maintenance outcome is being achieved.

5.5 Exclusions and exceptions

Although regional (and district) councils have broad responsibilities under the RMA for maintaining biodiversity the RMA makes two specific exceptions.

- Section 30 subsections (2) and (3) state that while a regional council may manage activities in the coastal marine area to address effects of fishing and fisheries resources it may not control the activity of fishing itself (which, as noted below, is controlled by the Fisheries Act).
- Section 4 (3) provides that land use control by district councils does not apply on conservation land where an activity is consistent with a conservation management strategy and does not have significant adverse effects beyond the boundary.

In addition, in accordance with the rules of statutory interpretation regional councils cannot control activities that are controlled by other agencies under more specific legislation and/or for which there are no specific powers in the RMA. There are a number of such activities as detailed in section 7 of this report.

5.6 New Zealand Coastal Policy Statement 2010

The extent and way in which the policy and regulatory roles (i.e. section 30 functions) need to be exercised to promote the maintenance of biodiversity is currently a matter of discretion for regional councils to exercise. However, in the coastal environment specific national policy guiding that discretion applies.

Policy 11 of the NZCPS 2010 focuses specifically on “Indigenous biological diversity (biodiversity)” in the coastal environment.

It takes a conceptually similar approach to that included in the earlier draft NPSs on biodiversity. It identifies specific taxa, ecosystems, habitats and areas in respect of which councils must “avoid adverse effects of activities”¹³.

Those priorities include:

- i. indigenous taxa that are listed as threatened or at risk in the New Zealand Threat Classification System lists;*
- ii. taxa that are listed by the International Union for Conservation of Nature and Natural Resources as threatened;*
- iii. indigenous ecosystems and vegetation types that are threatened in the coastal environment, or are naturally rare;*
- iv. habitats of indigenous species where the species are at the limit of their natural range, or are naturally rare;*
- v. areas containing nationally significant examples of indigenous community types; and*
- vi. areas set aside for full or partial protection of indigenous biological diversity under other legislation.*

The policy includes a second set of priorities subject to a lesser test of councils

¹³ This imperative may take on an even greater importance following the recent Supreme Court decision in *Environmental Defence Society v The NZ King Salmon Company*.

having to “avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities”.

Those priorities include:

- i. *areas of predominantly indigenous vegetation in the coastal environment;*
- ii. *habitats in the coastal environment that are important during the vulnerable life stages of indigenous species;*
- iii. *indigenous ecosystems and habitats that are only found in the coastal environment and are particularly vulnerable to modification, including estuaries, lagoons, coastal wetlands, dunelands, intertidal zones, rocky reef systems, eelgrass and saltmarsh;*
- iv. *habitats of indigenous species in the coastal environment that are important for recreational, commercial, traditional or cultural purposes;*
- v. *habitats, including areas and routes, important to migratory species; and*
- vi. *ecological corridors, and areas important for linking or maintaining biological values identified under this policy.*

That policy must be “given effect to” by councils’ regional policy statements, regional plans and district plans and must be “had regard to” when councils are making decisions on resource consents.

Key points

- *Since 2003 regional councils have had an express function under the RMA not just to manage for biodiversity but to develop and implement objectives policies and methods to maintain biodiversity (the only function in the Act with a broad imperative that is not limited to the method of regulatory control that contains an embedded objective).*
- *In addition to, and quite apart from, the “maintain biodiversity function” the sympathetic exercise of regional councils’ other core functions is critical to ecosystem functioning. Regional councils are required to exercise those other functions consistent with Part 2 of the Act with its various references to ecosystems and their constituent parts.*
- *Maintaining biodiversity is a hugely ambitious task often requiring positive, proactive intervention not just reactive measures. It also relies on actions by various other parties. This implies a need for regions to use tools and powers outside of the RMA and to co-ordinate efforts with other parties.*
- *Some sense of priority is provided by the NZCPS which provides clear direction on priorities for areas species and habitats that are to be protected in the coastal environment. That policy of the NZCPS is similar to national biodiversity policies previously (but unsuccessfully) proposed for NZ as a whole.*

6 Regional councils' biodiversity management powers under the Biosecurity Act

Under the Biosecurity Act 1993 (as amended 2012) a regional council has the *power* to prepare regional pest management plans and regional pathway management plans.

Such plans may contain rules requiring owners of land to eradicate, manage or contain plant or animal pests or otherwise manage pest pathways. Plans must also set out sources of funding for non-regulatory methods that may be proposed to address a pest issue. This might include council funds (including, for example general or targeted rates) or funding mechanism developed by external parties affected by a pest. Local Government funding of pest or pathway management plans is subject to normal Local Government Act processes.

While regional councils do not have a mandatory *function* requiring them to control pests (through developing and implementing pest and pathway plans), the 2012 amendment to that Act strengthened the expectation that regional councils will provide leadership to prevent, reduce, or eliminate adverse effects from harmful organisms (pests) that are present in New Zealand.

Before preparing pest and pathways plans regional councils must be satisfied that a number of tests can be met. One of these is that the pest to be managed under the plan is capable of causing adverse effects on one or more aspects of the New Zealand environment including:

- *The viability of threatened species of organisms*
- *The survival and distribution of indigenous plants and animals*
- *The sustainability of natural and developed ecosystems, ecological processes and biological diversity¹⁴.*

Thus the Biosecurity Act provides a mandate and a set of *powers and tools* for pest control that aims to protect biodiversity.

The tools and powers available to regional councils under the Biosecurity Act are also available to government agencies/Ministers. Some regional biodiversity threats are managed by national efforts under the broader biosecurity system including, in particular declaration of a species as an unwanted organisms, implementation of the plant pest accord and operational activity under the national interest pest programme.

¹⁴ See section 71 (d) of the BSA

7 Biodiversity management under the Local Government Act and associated legislation

The 2012 amendment to the Local Government Act 2002 (LGA) narrowed the statutory purpose of local government and the role of local authorities. It did not, however, affect the role of councils in biodiversity since that role is prescribed by separate statute (i.e. the RMA) – despite biodiversity protection not being a “core service” in section 11A.

The key relevance of the LGA is that it provides, in the form of Long Term Plans (LTPs), the framework for the direction and priorities of each local authority. Through LTPs councils secure funding for non-regulatory (operational) biodiversity protection methods (with specific measures subject to the work programming/budgeting and community consultation process).

As noted earlier, these proactive/operational measures (e.g. incentives for landowners and community groups, education and awareness raising, pest control, species recovery programmes etc) can be a critical component of delivering on the ambitious RMA function of maintaining biodiversity (something that will often require more than just managing the negative externalities).

This is the conundrum and principal source of tension in biodiversity management. Operational measures are often required to deliver on the “maintain biodiversity” function of regional councils under the RMA, but the nature and extent of such measures remains, of necessity, a matter for regional council/community to determine under the LGA processes.

This implies a need to closely link RMA functions with LGA tools and priority setting processes.

7.1 Rates Remission

Regional Council may also use section 85 of the Local Government (Rating) Act 2002 to provide for rates remission for land that has high biodiversity value where they have a policy to do so under section 109 of the same Act.

Key points (sections 7&8)

- *Pest or pathway plans under the Biosecurity Act are an express tool available to regional councils to address (amongst other things) threats to indigenous biodiversity. Although not mandatory, the 2012 amendment to the Biosecurity Act increases expectations that regions ought to prepare such plans.*
- *Because maintaining biodiversity requires proactive/operational action, the BSA and LGA may be critical components in regional councils' biodiversity management response.*
- *Linking the mandatory RMA function with access to powers and investment to fulfil that function may be critical to successfully undertaking that mandatory function.*

8 Agencies' roles in biodiversity management

A large number of agencies and groups (in addition to regional councils) have statutory or voluntary roles affecting biodiversity management. The key agencies/groups and their roles are outlined briefly below. These roles are identifiable from the functions listed in legislation or from the programmes that agencies implement. In addition, the NZBS lists 147 separate actions grouped under 10 themes. For each specific action, key players (implementers) are identified. In most cases a lead agency (or agencies) is also identified. This provides another insight into respective roles.

It is also worth noting that Principle One of the NZBS is the "Government is responsible for providing the direction and leadership to ensure the *conservation and sustainable use* of New Zealand's biodiversity as a matter of national importance"

8.1 Department of Conservation

The Department of Conservation is the principal central agency involved in the *conservation* of biodiversity.

It has a multiplicity of roles under a number of different statutes while not all of these specifically relate to biodiversity protection they all are capable of contributing to that objective. For simplicity these might be described as follows:

- *Public estate management* – managing the roughly one third of New Zealand's land area that has been retained by the Crown for conservation/park purposes (managed largely under the Conservation Act, National Parks Act and the Reserves Act and associated management plans)¹⁵. This includes national parks, high country parks, forest parks, reserves and offshore islands. DOC continues to add to the public conservation estate when opportunities arise for purchase of priorities areas and funding is available.
- *Species management* – operational work to ensure species (particularly threatened and endangered species) are protected and recovery programmes (including, for example, by the development and maintenance of mainland islands).
- *Conservation advocacy* – *advocating for conservation (particularly off the conservation estate)* in accordance with the Conservation Act 1986. Including inputting to plans prepared by local authorities under the RMA and into resource consenting processes.
- *Protection/regulation of freshwater fish* – under section 6(b) of the Conservation Act a function of DOC to preserve indigenous freshwater fish (as far as possible). Part 5B creates a number of offences in relation to freshwater fish¹⁶. The Director General also regulates the *movement of freshwater fish* from one location to another (under the Freshwater Fisheries Regulations under the Conservation Act). Controlling the taking of whitebait controlled by DOC under the Whitebait Regulations 1994.

¹⁵ DOC manages about 8.5 million hectares of land, 34 marine reserves (covering almost 1.28 million hectares), and 6 marine mammal sanctuaries (covering nearly 2.4 million hectares)

¹⁶ The freshwater fisheries provisions of the Conservation Act serve a range of functions, such as maintaining genetic diversity, managing the risks of gene pool contamination associated with transfers and liberation of native species, and managing stocking densities, as well as managing transfers for biosecurity reasons (e.g. the distribution of pests and control of associated disease).

- *Protection/regulation of wildlife* - Under the Wildlife Act 1977 all wildlife (excluding fish and wild animals under the Wild Animal Control Act 1977) not scheduled under the Wildlife Act, is protected and permission is required by DOC to kill any such wildlife. DOC also regulates the keeping of ferrets, polecats, stoats and weasels under the Wildlife (Farming of Unprotected Wildlife) Regulations 1985.
- *Protection/regulation of marine mammals* – Under the Marine Mammal Protection Act all marine mammals are protected. Permits are required to take marine mammals from their natural environment. DOC is responsible for administering and enforcing that Act and the Marine Mammals Protection Regulations 1992. Under the Act the Minister of Conservation is entitled to set up marine mammal sanctuaries. To date two sanctuaries have been established.
- *Wild animal control* – Under the Wild Animal Control Act 1977, DOC has the power to enter onto private land to control wild animals (wild deer, goats, pigs, chamois, thar, wallabies, possums etc).
- *Provision of incentives and support for private (and public) conservation efforts* – DOC operate four contestable funds aimed at assisting biodiversity management and protection.
 - The *Biodiversity Advice Fund* provides grants to those public and private organisations (including local authorities) providing advice on biodiversity protection to private landowners.
 - The *Biodiversity Condition Fund* provides grants to individuals and public and private organisations (including local authorities) that enhance areas and habitat (typically through fencing and pest control or/and restoration planting).
 - The Terrestrial and Freshwater Biodiversity Information System (TFBIS) *Biodiversity Information Fund* provides grants to organisations in support of the implementation of the TIFBIS Strategy (to improve knowledge of, and access to, biodiversity information).
 - *Nga Whenua Rahui* provides grants for the protection (both legal and physical) of indigenous vegetation on Maori land.
 - The *Nature Heritage Fund* provides protection by land purchase or legal covenanting aimed at protecting ecosystems covering the full range of natural diversity originally present in the New Zealand landscape.
- The making of *marine protected areas* – controlled by the Department of Conservation under the Marine Reserves Act 1971.
- *Conservation information, research and science* – DOC provides a range of geospatial information and undertakes research and science on conservation priorities.

Under the NZBS DOC is identified as a key player in 127 of the 147 actions and is the lead (or co-lead) player in 67 of those actions.

Key points

DOC's role is broad and multi-faceted. A simple summary may be to refer to three key areas of interest:

- Legal protection of land and marine areas for conservation purposes (i.e. creation and extension of a terrestrial and marine public conservation estate) including the on-going management of that estate.*
- The pro-active protection of species and populations (including through pest management/biosecurity) on, and affecting public conservation land and, to some extent, more broadly.*
- Promotion of conservation off the public conservation estate through funding and advocacy.*

8.2 Regional councils

Regional councils roles have been described in sections 5, 6 and 7 of this report. In addition it is worth noting that regions (either by themselves or with territorial authorities) are identified by the NZBS as having a key role in 82 actions, including having a lead role in nine actions.

Those nine lead roles relate to:

- Promoting landowner and community awareness of opportunities to conserve and sustainably use biodiversity, and to protect and maintain habitats and ecosystems of importance on private land (joint lead with TAs, MfE and DOC).
- Develop and implement strategies and plans, including national and regional pest management strategies, to manage those plant and animal pests posing significant threats to indigenous biodiversity (joint lead with DOC and MAF – now MPI).
- Increasing research into, and development of, new technologies and techniques to combat existing and emergent threats from plant and animal pests to indigenous biodiversity (joint lead with DOC)
- Expanding habitat and ecosystem restoration programmes and initiatives (including those on offshore islands, “mainland” islands, kiwi sanctuary zones, and other sites within production lands and urban areas) to restore scarce or under-represented indigenous habitats and ecosystems to a healthy functioning state (joint lead with DOC).
- Developing and implementing regionally based restoration strategies identifying priority areas for restoring biodiversity and develop opportunities for collaboration both within and between regions (joint lead with DOC).
- Encouraging community understanding of, and involvement in, programmes and activities to protect, maintain and restore indigenous biodiversity through showcase projects and volunteer programmes, and improve access to

information, technology, expertise and resources (joint lead with DOC, MfE and TAs).

- Developing and implementing strategies and plans, including national and regional pest management strategies, to manage those plants and animals posing a threat to indigenous freshwater biodiversity and those potential pest species already present in New Zealand but not yet widespread (joint with DOC).
- Developing and implementing indicators under the Environmental Performance Indicators Programme and strategies for assessing the effectiveness of biosecurity management in protecting indigenous biodiversity and important species (joint lead with MfE).
- Developing and using national and regional “biodiversity awards” to reward notable efforts or achievements by landowners, businesses and community groups to conserve and sustainably use indigenous biodiversity (joint lead with DOC and TAs).

8.3 Territorial authorities

As noted in section 4, under the RMA, territorial authorities have the role of controlling the effects of the use and development and protection of land including for the purpose of the maintenance of indigenous biological diversity.

This is a narrower and more specific function than that which applies to regional councils (applying, as it does, only to control the effects of land use).

This statutory function, in conjunction with section 6 matters, has tended to translate to provisions in district plans that control clearance of indigenous vegetation and/or protect significant natural areas and significant habitats. Although, as noted earlier, whether that role is carried out is dependent on how the RPS has allocated responsibilities between regional councils and TAs.

It is also important to note some TAs adopt a broader role in biodiversity including providing planning incentives for vegetation protection or restoration (through tools such as bonus development rights) as well as grants and financial assistance for positive conservative work in the community (under the LGA).

8.4 Ministry for Primary Industries

The Ministry for Primary Industries (MPI) has three roles relevant to the maintenance of biodiversity.

- *Fisheries management* (including the four freshwater species in the quota management system) – controlled under the Fisheries Acts 1983 and 1996 and various regulations
- *Indigenous forest management* to ensure sustainable harvest – under Part IIIA of the Forests Act 1949 (as amended in 1993).
- *Biosecurity/pest management* – leadership of the national biosecurity system. This includes certain pre and post border roles that are important to maintaining biodiversity. (Note that new measures aimed at managing pests that threaten biodiversity at the national level (such as a pest management plan) would be led by DOC in accordance with the general scheme of the Biosecurity Act).

The first two of these roles illustrate MPI’s role as lead agency for the *sustainable* use of New Zealand’s biodiversity.

8.5 Fish and Game New Zealand

The New Zealand Fish and Game Council (F&G) is a statutory but non governmental entity charged under the Conservation Act with managing both sports fish and game. This involves operating a licensing system and well as operational activity to maintain fish and game stocks.

F&G's role extends to advocating for the protection of habitat for those game and sports species (all of which are introduced) and may, according to recent case law, extend to advocating for freshwater habitat protection more generally.

8.6 QEII National Trust

The QEII National Trust assists landowners to secure legal protection of private land (usually by covenant with the Trust acting as the perpetual trustee). Although supported both by DOC and local authorities the QEII National Trust is an independent entity and source of advice for landowners that operates under its own governing legislation (the Queen Elizabeth II National Trust Act 1977).

Voluntary uptake of QEII covenants provides a method and tool for the protection of areas and habitats of importance to the maintenance of biodiversity.

8.7 Trusts and community organisations

Dozens of trusts and other community organisations around the country have established and maintain reserves and/or programmes involving “hands on” conservation work. Most of these will contribute in some way towards maintaining biodiversity.

8.8 Science Research Institutes

Landcare Research is a key provider of land cover information, science and research and custodian of various biodiversity relevant data bases (and geospatial information tools) including the National Vegetation Survey (NVS) – to which DOC, regional councils and others also contribute data. NVS is a detailed centralised database of vegetation cover from survey plots throughout New Zealand.

NIWA performs a similar role to Landcare over freshwater and marine environments undertaking a range of biodiversity research projects and maintaining databases such as the National Freshwater Fish Database. Regional councils, DOC and others contribute to that database.

Key points

- *A range of other parties have roles that are, individually and cumulatively critical to regional councils being able to fulfil their mandatory biodiversity function. However, DOC excepted, those functions are highly specific to particular risks or management tools. While DOC has a broad mandate, it lacks the regulatory tools to address many threats to biodiversity off the conservation estate.*
- *No other party has the mandate or powers to do what regions can do.*

9 Current regional council practice in biodiversity management

There have been three previous reported surveys of local authorities' activity in relation to biodiversity. These occurred in 1999ⁱⁱⁱ, 2004^{iv}, and 2010^v.

In February/March 2014 a further survey of all regional councils and unitary authorities' biodiversity activity was carried out.

The primary purpose of the survey was to ascertain:

- how regional councils see their role in biodiversity management (and how that compares to the theoretical description provided in this paper); and
- the way and extent to which regional councils deliver their function.

The responses are reported in full in the companion report *Biodiversity: A Survey of Regional Councils April 2014*.

No reply was received from Nelson City Council. West Coast Region did not complete the questionnaire but supplied a general statement. The response to the questionnaire was otherwise very good and a significant amount of information was gathered. However, differences in interpretation of questions and/or the detail provided in reported responses means there was limited ability to aggregate data on (in particular) investment to produce "all regions" results.

For that reason, a second set of questions was circulated in June 2014 specifically asking about express and incidental investment on biodiversity. That questionnaire provided added guidance on the expenditure that should be included in each category.

The two sets of survey results provide a wealth of information to assess the range of effort and approach to different aspects of biodiversity management across the regional sector.

9.1 Regional council characterisation of their biodiversity role

Many respondents provided lengthy and thoughtful responses to the general question about how they characterise their role in biodiversity management. However, most described their roles by reference to what their statutory plans set as mission statements or objectives. (In all cases, the objectives cited were focused on maintaining biodiversity generally implying a sole responsibility rather than the shared responsibility it inevitably is). Alternatively, described roles focused on what councils do (e.g. "undertake SNA assessments", "developed plans" or "regulated vegetation clearance"). Few responses provided a clear picture of their role (in either functional or spatial terms) vis-à-vis other players.

Some key themes from responses were:

- *Leadership* - council's commitments to methods in RPSs encouraging collaboration, or the council's role in creating and/or supporting biodiversity groups and forums or in the development or consideration of regional biodiversity strategies.
- *Relationship with DOC*. As a subset of leadership many respondents referred to some sort of partnership arrangement (e.g. MoU or invitation to a regional group).

- *Multi-faceted involvement* – Most respondents noted that their involvement in biodiversity spanned a wide range of regulatory/non regulatory activity and roles (regulator, funder, educator, operations manager etc).

9.1.1 Specific role questions

The commitment and level of involvement ranged from very strong commitment to a much more narrow focus on considering biodiversity only within the context of other statutory functions.

Overall, there appears to be a clear majority view that biodiversity management is a core function and is something that is in addition to other core functions (rather than being simply a component of those land, water and coastal management responsibilities). However there was variation in the extent to which councils described biodiversity as a core function.

9.1.2 Biodiversity in LTPs

A further survey question was asked about the inclusion of reference to biodiversity in LTPs. This question was intended to test whether responses to the former questions about biodiversity as a core function were reflected in how biodiversity was dealt with in councils' primary strategic planning Documents.

Interestingly, 10 councils claim that biodiversity was expressly mentioned in one or more levels of service (LoS) and/or performance measures. A further two councils claimed that biodiversity was mentioned in the LTP as an activity but not specifically as a LoS or performance measure. One council claimed that biodiversity wasn't specifically mentioned as a LoS but a similar term was used and another claimed biodiversity was not specifically mentioned but was broadly covered by a more general reference.

The interesting point is that these responses did not correlate to the responses to the previous questions about biodiversity as core function. In other words in at least one case biodiversity was specifically referenced as a LoS despite it apparently not being considered a core function by that council.

Key points

- *The overwhelming majority of councils see biodiversity management as a core function rather than merely a consideration in the exercise of "traditional" land, water and coastal responsibilities.*
- *All councils indicated that their LTPs accepted biodiversity management as a council service.*

9.2 Overall budget and resourcing

Part B of the questionnaire contained questions about the level of investment for the express purpose of biodiversity management ("express investment") and investment that was primarily for another purpose but which had incidental benefit for biodiversity ("incidental investment").

9.2.1 Investment directly and expressly on biodiversity

Respondents were asked to identify the investment that was made that would not be made if biodiversity management was not a regional council function.

The question was challenging for respondents to complete given that biodiversity activity typically crosses multiple cost centres and financial reporting seldom distinguishes between operational and policy costs in the manner anticipated by the question. In many cases figures provided were estimates. While it is likely that there was some variation between councils in what was classified as “direct and express” and what was “incidental” (see next section), given the breakdown of costs provided the information provided is likely to be reasonably accurate.

The cumulative investment was reported as \$33.65 million for the 2013/2014 year. The range of reported expenditure between regions was very significant. Part of this might be explained by the extent to which pest management costs were included as an express biodiversity investment. The largest reported 2013/14 investment (operational and policy) directly on biodiversity were:

- \$8.1million (excluding labour) – Waikato
- \$6.2 million (approximately) - Environment Canterbury
- \$6.14 million (approximately) - Auckland

Note, Auckland reported 2 to 3 million on monitoring and approximately 0.5 million in policy costs (much associated with recent development of the Auckland Unitary Plan).

Smaller councils (Northland, Hawkes Bay, Horizons, Taranaki, Marlborough) reported a correspondingly lesser level of investment mostly in the range of \$0.5 million to \$2.5 million. Gisborne, Tasman and Southland reported less the \$0.5 million investment.

9.2.2 Investment with incidental benefit

A further question was asked about regional council investment that, while motivated primarily by other concerns, has an incidental benefit for biodiversity.

This directed respondents to consider investment in biosecurity/pest management (in addition to biodiversity-specific pest management), land management activity, river control/flood management, research/monitoring, environmental education and consent processing as potentially having such “incidental” benefit.

Respondents were asked to identify the expenditure in those areas (and any others they considered relevant) and specify the proportion of that total investment that produced a benefit for biodiversity.

The total (aggregate) reported incidental biodiversity across the sector was \$33 million¹⁷.

As noted earlier there is likely to be some differences in reporting in terms of whether investment is reported as express or incidental. However, the two figures combined sum to approximately \$67 million for the 2013/14 year.

That investment compares with approximately \$155 million spent by the Department of Conservation on the “Management of Natural Heritage” output class as reported in its 2012/13 Annual Report.

¹⁷Note, this excludes Canterbury. (Environment Canterbury did not report Investment with an incidental biodiversity benefit).

9.2.3 Biodiversity staff

Overall the 14 respondent councils identified 190-193 FTEs that had biodiversity management as their primary role. Auckland reported the most with 55. More personnel were said to have biodiversity management as part of their job description (a total of between 277-280). Sixty-eight staff have “biodiversity” specifically within their job titles (including those “ecologists” in Auckland).

All councils reported an additional number of FTE’s with some involvement in biodiversity management.

Key points

- *The total regional council investment attributable to biodiversity management is more than \$70 million per year. This compares with approximately \$155 million invested by the Department of Conservation – making the regional sector a major player in biodiversity management and almost certainly the second biggest investor in New Zealand.*
- *Almost 200 regional council staff have biodiversity as their primary role. Almost 300 have biodiversity within their job descriptions*

9.3 Other key survey findings

- Six regional councils have, or have committed to, non-statutory biodiversity strategies as a means of co-ordinating and prioritising biodiversity effort within their organisations. These strategies do not generally extend beyond the council organisation.
- There appears to be little consistency or accepted methodology to the way biodiversity investment is prioritised (although there is a well accepted means for prioritising between particular sites).
- At least ten RPSs have biodiversity chapters. Eleven have measureable biodiversity objectives.
- Eleven regional councils have plans that use the term “biodiversity”. Nine recognise they have rules (or conditions in rules) designed to protect biodiversity.
- There were nine reported enforcement actions in relation to regional plans’ protection of biodiversity (2012/13). Most of those related to unauthorised damage to wetlands.
- Regional councils collectively provided grants and incentives worth over \$8 million (2013/14) – around 11% of total regional council investment in biodiversity.
- All councils provide some level of biodiversity education and advice though investment levels are typically very low. Most also have some biodiversity focus in the management of their own land though investment for most is modest.

- Eleven councils engage in proactive conservation work with relatively significant contributions made by the larger councils.
- Although difficult to gain accurate data on, regional councils collectively spend approximately \$22 million pa on pest management that benefits biodiversity.
- All councils reported having data bases/information management systems to assist with the biodiversity management functions
- Five councils unreservedly reported regularly monitoring the extent of indigenous vegetation in their regions. In addition Canterbury noted that the “regularity” was limited. Taranaki noted that the extent of wetlands is monitored but vegetation cover is monitored only through the national LCDB (which is only infrequently updated).
- Nine councils reported monitoring the condition of indigenous vegetation and habitats. These appeared to be of various levels of detail. Four councils reported no extent or condition monitoring.

10 Overview of Key Roles and Functions

In an issue like biodiversity it is impossible to assert that a single, indisputable definition exists of the role and function of regional councils vis-à-vis other agencies. There are few “neat boxes” within which discrete functions can be exclusively attributed to a single player or sector. There is simply no overall “grand design” for biodiversity management that erects clear functional boundaries.

Despite that, Table 1 attempts to map out the various roles and areas of activities of the various players as best can be done. It looks at spatial areas of activity (vertical axis) and functional areas of activity (horizontal axis). Specific roles and the responsible agencies are indicated in corresponding cells.

Table 1 illustrates that the field of biodiversity management is characterised by overlapping areas of activity between multiple parties. This no doubt reflects the “all hands to the pump” response to an issue of (in many parts of New Zealand at least) considerable public interest and the degree of urgency of response that is often experienced. Pressure for public organisations to “fill holes” or “pick up the slack” created by funding shortages of other agencies has undoubtedly contributed to the complexity of current activity.

However, critically it shows that regional councils can inhabit important niches (to borrow an ecological concept) that no other party fills. It also shows the regional councils functional area of responsibility focuses on the management of habitat quality. Central agencies’ focus is on species management (including, although not shown, management of genetic resources).

10.1 Key Players

In broad terms, as Table 1 illustrates, roles around biodiversity may be characterised as follows:

- The *Department of Conservation* contributes to national leadership on biodiversity issues. It manages public conservation estate and is responsible for extending and enhancing that estate both in terrestrial and marine environments to further conservation and biodiversity objectives. It is also responsible for managing species and populations on those lands and the threats to those species and populations. It has specific statutory responsibilities for wildlife more generally (i.e. off public conservation lands) but in practice resourcing constraints and the desire for long term security of outcome from public investment limits investment in pro-active species programmes off the public conservation estate. Off the public conservation estate DOC provides a *supporting* rather than leading role.
- *Regional councils’* contribution is variable in practice but they do provide regional level *leadership* on biodiversity outside of the public conservation estate. In particular, they have primary responsibility for the regulatory *protection of habitat/ambient environmental conditions* in aquatic and marine environments. Should they so choose, they may also assume primary responsibility for the protection of terrestrial habitats off the public conservation estate. In exercising regional leadership they may provide policy direction and undertake a range operational programmes to protect and enhance terrestrial and aquatic biodiversity off the public conservation estate subject to securing the regional political and public mandate.
- Territorial authorities have primary responsibility for protecting terrestrial habitats (unless the regional council has determined otherwise).

- A principal role of the *Ministry of Primary Industries* is ensuring that harvesting of native species occurs in a way the sustains the stocks of target species on an on-going basis and, to a lesser extent, minimises the impacts of stock harvesting on non target species.

10.2 Mandatory roles for regional councils

There are certain things that a regional council *must* do under the RMA. These are expressly specified in the RMA or may be deduced from a plain reading of the Act's provisions. Councils are already carrying out these roles:

They must continue to:

1. Include in their RPSs and/or regional plans objectives, policies and methods aimed at maintaining indigenous biodiversity (section 30 (1) (ga)).

The nature and extent of these methods (including whether regulatory, non regulatory or both) is a matter for individual council discretion subject only to satisfying the requirements of section 32 of the RMA to consider the effectiveness and efficiency of those policies and methods.

2. Include in their RPSs a statement specifying the local authority responsible for controlling the effects of land use on indigenous biodiversity (section 62 (i)).

This will involve discussions with the territorial authority on who is best placed to carry out the land use control function.

3. Consistent with the function of achieving integrated management, undertake their other mandatory functions under section 30 in such a way as to be mutually supportive of the function of maintaining biodiversity. This includes ensuring that the objectives, policies and methods specified in relation to biodiversity are reflected in the design and implementation of plan provisions that give effect to those other mandatory functions.

4. Implement and enforce the RPS/plan insofar as its provisions are to be "given effect to" by territorial authorities and any rules are complied with (including regional resource consenting).

5. Comply with the duty under section 35 (1) & (2) of the RMA to:

- a. Gather information as is necessary to carry out its functions (which includes "establishing and implementing objectives, policies and methods for maintaining indigenous biological diversity).
- b. Monitor the state of the environment (with the environment including ecosystems and their constituent parts)
- c. Monitor and report the effectiveness of the policies rules, or other methods, of its RPS or plan (which, given the function described above, will include biodiversity policies and methods).

Table 1 - Regional councils place in biodiversity management

	Habitat Quality			Species protection/population management & recovery
	Legal protection of sites	Management of adverse effects of resource use	Operational investment in habitat protection and restoration	
Private (including Maori) land	DOC [Nga Whenua Rahui, Nature Heritage Fund QEII - covenants Territorial authorities [consent conditions/notices, reserves acquisition] Regional councils [parks acquisition]	Territorial authorities/unitary authorities Regional councils* (when accepted)	Regional councils [soil conservation & rivers control] DOC [Biodiversity advice and condition improvement funding] Regional councils [Direct and third party funding of projects] Regional councils/DOC/ MPI [pest management]	DOC – Wildlife protection MPI [Indigenous forest harvesting]
Freshwater environments	-	Regional councils*		DOC [Wild animal control] MPI [Biosecurity – incursion response]
Marine environments <12NM	DOC [Marine reserves]	Regional councils*		DOC – [Freshwater fish and whitebait management] MPI [Fisheries management] MPI [Biosecurity – incursion response]
Marine environments 12NM – 200NM	DOC [Marine reserves]	Minister for the Environment/EPA	-	MPI [Fisheries management]
Other public conservation estate	DOC [Ownership]	Regional councils*	DOC	DOC – Access and concessions system DOC [species recovery, mainland islands, pest control] Regional councils [pest management]

6. *Mandatory regional council biodiversity functions in *italics*

10.3 Non Mandatory Roles

As discussed earlier, in addition to mandatory functions of the RMA regional councils have discretion to deploy resources and institute non regulatory programmes and/or regulate using powers available under other legislation.

Assuming roles that rely on such powers is not legally mandatory, although most commentators on biodiversity management would suggest that, in most parts of the country using the powers will be necessary if a regional council is to deliver the ambitious objective of maintaining biodiversity.

However, whether such discretionary powers are exercised will depend on the particular circumstances in each region. Of particular relevance will be:

- the state of biodiversity in the region and the particular threats that do and do not exist;
- the financial and technical resource available to the council; and
- the mandate that the regional council has from its community.

10.3.1 Expected, and largely accepted, roles

The above points acknowledged, there are a number of roles that are widely undertaken by many regional councils because they have become accepted in those regions as essential to the maintaining biodiversity in the region.

On the basis of these established practices it is possible to suggest the following guidelines.

In giving effect to the mandatory roles and functions above regional councils *should*:

1. Engage in vegetation/habitat identification or provide guidance on [regional] priorities.
2. Integrate biodiversity objectives into:
 - a. Land management/soil conservation planning/operational decision-making
 - b. Flood protection/river engineering works
 - c. Pest management operation programme priority setting
3. Use functions and powers under the Biosecurity Act to identify and regulate priority pests that threaten biodiversity.
4. Provide a level of advice and education to the community and landowners on what they can do to assist biodiversity.
5. Engage with DOC and other key players in the region to share information and seek operational synergies.
6. Acknowledge and reflect biodiversity in councils' LTPs.

10.3.2 Discretionary roles

In addition to the above, there are roles that regional councils may (and sometimes do) undertake.

Regional councils *may*:

1. Adopt a leadership role in biodiversity regionally by developing means to drive strategic alignment between investments and operations of multiple players across the region.

2. Provide a level of financial support to landowners and/or community groups for biodiversity projects.
3. Engage in species recovery programmes (alone or in partnership with others)
4. Acquire and hold land for the express purpose of biodiversity conservation and enhancement.

11 Key outstanding issues

Stage 1 of this project has reviewed the meaning of biodiversity and regional council functions, powers and current activity in respect of it.

As expected, the paper has raised a number of questions and issues related to both operational and strategic matters. These are outlined below.

11.1 Strategic Issues

Two key strategic issues are apparent. These relate to whether the current legislative and policy arrangements are conducive to effective and efficient management of biodiversity. These are:

1. *Lack of legislative clarity and coherency* - Like many areas of resource and environmental policy, the legislation and policy frameworks that apply to biodiversity management have developed incrementally over time without any overall coherent plan. While they work to a point, they are, in many respects, muddled and lacking in clear focus.
2. *Lack of clarity over roles and responsibilities* – Many parties have a role in biodiversity management but lines of responsibility are not always clear and leadership is dispersed. There is a particular issue about whether the demarcation of roles provided in the 2000 Biodiversity Strategy has been adequately reflected in the 2003 Amendment to the RMA.

11.2 Operational questions

The operational questions focus on how regions might undertake their existing roles and functions better within the current legislative and governance arrangements.

11.2.1 Regional councils level of effort and priority setting

As noted earlier, the core challenge faced by regional councils is that the RMA sets a hugely ambitious objective but specifies few (legally) mandatory activities. That means there is much discretion exercised by individual councils as to what, and how much they do, and where. While that degree of discretion is appropriate, it raises a host of issues and questions including:

- a. How investment priorities are determined (something the survey shed limited light on). Do we budget rationally? Do we know where we get best bang for our biodiversity buck?;
- b. Should priority setting be purely science-driven or take a broader social capital perspective (i.e. should all resource be devoted to intensive management of the biggest number of key sites that is affordable, or should some investment be aimed at wider engagement with the public motivating community and landowner effort. If so, how should that balance be struck?);
- c. How do we decide how much effort and investment should be placed in maintaining and improving the condition of sites versus safeguarding their existence through securing legal protection? Should regional councils be involved in both dimensions of management?
- d. How much financial support should be made available to third parties versus landowners, versus council undertaking functions itself?
- e. How do we determine whether the level of investment is “right” (collectively and individually) relative to the biodiversity issues of the region, the

importance of the region to national biodiversity priorities and the overall spending of the council?

11.2.2 Regional councils' comparative advantage in biodiversity management

In terms of determining the appropriate scale at which biodiversity management should occur, the key consideration is what scale does it best? Or probably more to the point, what specific activities are best carried out at what level. In that sense some key questions are:

- a. Outside of its core regulatory (effects management) role, what expertise do regional councils have that allows them to add value to biodiversity management that no other agency can?
- b. What funding ability, community mandate and legislative powers do regional councils have that are available to no one else and how important are these to biodiversity maintenance?
- c. What is currently stopping regional councils doing a better job? Are there different impediments in relation to different biodiversity activities?
- d. Are there some activities regional councils see carried out by others that they believe they could do better, or could be done better with regional council involvement?
- e. Are there some regional council initiatives that they consider are done better by others?

11.2.3 Pan regional sector issues

Closely related to the above questions are issues about the sector as a whole and how effective the *collective* regional council effort currently is (when considered from a national perspective). These include:

- a. Is the regional sector adding the best value it can from the level of investment it makes?
- b. Is the variability in regional council effort having adverse consequences on the national biodiversity effort? (What's the match between regional effort and biodiversity issues?)
- c. Is the collective regional council effort well aligned with the priorities for New Zealand as a whole? (Or are regional priorities different from national ones?)

Answering these questions (and in particular the strategic questions raised above) must involve other parties. Central government agencies and district councils have a particular mandate and interest in questions of the law and policy frameworks and should be involved in any further initiative by regions to address such issues.

12 Conclusion

While this paper contributes to a clearer understanding of what biodiversity is and respective roles in managing it, it has also illustrated the complex nature of the law and governance arrangements.

Biodiversity management at the regional level is challenging because it requires the careful deployment of both regulatory and non-regulatory methods in a world where there are practical, legal and political limits to both.

In terms of the focus of Stage 2 of this project, the paper has identified a series of both operational and broader strategic questions. These should form the basis of the terms of reference for the next stage.

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